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EXAMINER

COX, ALEXIS K

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/551,561
Filing Date: June 15, 2006
Appellant(s): MANETTAS ET AL.

James E. Howard, Attorney
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5/26/2010 appealing from the Office action mailed 2/19/2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The following are the related appeals, interferences, and judicial proceedings known to the examiner which may be related to, directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal:

Application #10/551339, a sibling application, has a Notice of Appeal filed but no appeal brief filed

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

3,839,878	TILMANIS	10-1974
4,345,441	HANSEN	8-1982
2001/0054292	DAVIS ET AL	12-2001
2004/00790099	KUMADA ET AL	4-2004
2004/0256473	HULL ET AL	12-2004
2005/0210900	OOMURA ET AL	9-2005
4,697,734	UEDA	10-1987
4,894,999	KAIJU ET AL	1-1990
5,775,415	YOSHIMI ET AL	7-1998

Oxford English Dictionary, online edition

Definition of "vicinity"

Retrieved 2/02/2010

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 10-12, 14, 17, and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Tilmanis (US Patent No. 3,839,878).

Regarding claims 10, 17, 21, and 22, Tilmanis discloses a refrigeration device, comprising a thermally insulating housing (10, see column 3 line 53, see also figure 1) enclosing an inner chamber (14, see column 3 lines 54-55) and an evaporator arranged in said housing (18, see column 3 lines 59-60) separated from the inner chamber; the evaporator including a surface where an ice layer forms during operation (see column 5 lines 10-14); a pair of temperature sensors (36, 38, see column 4 line 10) placed in the vicinity of the evaporator such that for a given thickness of the ice layer only one of the temperature sensors is embedded in the ice layer (see column 4 lines 17-19); a heating device for heating the evaporator (see column 3 lines 63-65); and a monitoring circuit connected to the pair of temperature sensors (see column 4 lines 30-41) which determines the difference between the temperature values detected by the pair of temperature sensors and activates the heating device when the temperature difference exceeds a predetermined value (see column 4 lines 42-47).

Regarding claim 11, the refrigeration device of Tilmanis further has a first sensor arranged directly on the surface of the evaporator (36, see column 4 lines 17-18) and the second temperature sensor is arranged at a distance from the surface (38, see column 4 lines 18-19).

Regarding claim 12, the refrigeration device of Tilmanis discloses a channel communicating with the inner chamber with the evaporator arranged in the channel, as without such a channel the refrigeration device would not keep the inner chamber cold.

Regarding claim 14, figure 1 discloses the refrigeration device of Tilmanis to have the evaporator arranged in the housing separated from the inner chamber by an

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insulating partition, and there must be at least one channel through the partition communicating with the inner chamber and the evaporator in order to keep the inner chamber cold.

Regarding claim 20, the evaporator is heated when it is decided that a defrosting procedure is necessary (26, see column 3 lines 63-65 and column 4 lines 1-3).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tilmanis (US Patent No. 3,839,878).

Regarding claims 13 and 15, it is noted that Tilmanis does not explicitly disclose the second temperature sensor to be arranged on an output of the channel terminating in the inner chamber. However, it would have been an obvious mechanical expedient to one of ordinary skill in the art at the time of the invention to rearrange the existing parts to place the second temperature sensor on an output of the channel terminating in the inner chamber in order to ensure that the temperature sensed by the second temperature sensor is not rendered inaccurate by proximity to frozen items in the freezer. Further, this placement is not contrary to the disclosed location of the second temperature sensor, as the output of the channel communicating with the inner chamber may be considered to be the border between the channel and the frozen food compartment.

7. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tilmanis (US Patent No. 3,839,878) in view of Davis et al (US Patent Application Publication No. 2001/0054292).

Regarding claims 18 and 19, it is noted that the system of Tilmanis is not explicitly disclosed to perform a preset delay after the evaporator is started up before beginning the defrost evaluation procedure, or to perform the defrost evaluation procedure if the speed of change of temperature on at least one of or both sensors has

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fallen below a predetermined limit value. However, the system of Davis et al comprises a microprocessor controller which receives and interprets sensor signals (see paragraph [0016]), and it would have been obvious to one of ordinary skill in the art at the time of the invention to implement such programming in the controller in order to prevent excessive defrosting, which is inefficient, and also to prevent inadequate defrosting, which is also inefficient.

8. Claims 13, 15, 16, and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tilmanis (US Patent No. 3,839,878) in view of Hansen (US Patent No. 4,345,441).

Regarding claims 13 and 15, it is noted that Tilmanis does not explicitly disclose the second temperature sensor to be arranged on an output of the channel terminating in the inner chamber. Hansen explicitly teaches that placement of a second temperature sensor in the freezer compartment is known in the art, and that it is an improvement to not locate the second temperature sensor in the inner chamber, and Hansen discloses but does not require juxtaposition of the first and second temperature sensors (see column 2 lines 13-14 and column 1 lines 31-39). The placement of the second temperature sensor in the steady airflow provided by the outlet of the air channel of the system of Tilmanis and Hansen would therefore have been obvious to one of ordinary skill in the art at the time of the invention in order to provide continuous airflow without requiring the evaporator to be upright, thereby permitting a more flexible use of space.

Regarding claims 16 and 24, it is noted that Tilmanis does not explicitly disclose the use of a single thermally insulating carrier attached to the evaporator surface with

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the first and second temperature sensors arranged directly adjacent the evaporator and at a distance from the evaporator. Hansen explicitly discloses a defroster with a carrier (9, see figure 5) which holds one sensor directly on the evaporator surface and the other further away (Te, Tr, see column 4 lines 20-24; see also column 2 lines 1-12). As the system of Hansen was designed to be used in a refrigerator, such as that of Tilmanis, it would have been obvious to one of ordinary skill in the art at the time of the invention to use the convenient carrier of Hansen in the system of Tilmanis in order to use the relative temperature sensor inputs without potential inaccuracies caused by the closeness of the second sensor to the frozen food in the interior space.

Regarding claims 23 and 25, it is noted that Tilmanis does not disclose positioning the second temperature sensor adjacent a ventilator positioned between the evaporator and the inner chamber. Hansen explicitly discloses the advisability of having the evaporator vertical to encourage air flow across the temperature sensors (see column 1 lines 65-68). It would therefore have been obvious to one of ordinary skill in the art at the time of the invention to implement the carrier on Hansen in the system of Tilmanis adjacent a ventilator in order to pursue this same goal of continuous air flow to enable more reliable sensor operation.

(10) Response to Argument

It is argued on page 7 that thermistor 38 of Tilmanis is not “in the vicinity” of the evaporator.

OED Online Edition, Definition 1: The state, character or quality of being near in space; propinquity, proximity.

The examiner questions how, if the freezer chamber were not “near in space” to the evaporator, the freezer chamber could be made cold by the evaporator.

Further, an example is given that by the examiner’s definition, the basement of a building is in the “vicinity” of the tenth floor, should the air conditioning unit be located in the basement and cooling the tenth floor.

However, there are two issues with this characterization: first, that from the perspective of space, the basement is near the tenth floor of an individual building; second, the examiner did not invent the definition provided. The Oxford English Dictionary is considered to be the premier source of word definitions for the English language in the world; as such, it is a reasonable source for a definition of a word whose meaning is in dispute.

The definition of “vicinity” is not, in any standard definition, related to the thickness of an ice layer.

Further, it is argued on page 8 that Claim 10 recites that the pair of temperature sensors are placed in the vicinity of the evaporator such that for a given thickness of the ice layer only one of the temperature sensors is embedded in the ice layer.

It is clear from the placement of the temperature sensors of Tilmanis that only one of the temperature sensors, sensor 36, will be embedded in the ice layer of the evaporator; this limitation has been met. The presence of “such that for a given thickness of the ice layer only one of the temperature sensors is embedded in the ice layer” in no way changes the meaning of the word “vicinity”.

Should the appellant prefer, other standard definitions of “vicinity” are available: for example, definition 4, “In the neighborhood of, near or close to.” This hardly implies a more limited reading of “vicinity” than has been applied; the appellant is respectfully reminded that the examiner is required to use the broadest reasonable interpretation.

It is argued beginning on page 9 that claims 13 and 15 are not unpatentable under 103a) over Tilmanis.

It is argued on page 9 that the proposed modification of Tilmanis is “not suggested in Tilmanis.”

The examiner can only respectfully remind the appellant that the modification need not be suggested in Tilmanis; instead, there is only a requirement that there is a reason for it to have been obvious to one of ordinary skill in the art at the time of the invention to make the modification. As there is clearly a reason provided (in order to provide continuous airflow without requiring the evaporator to be upright, thereby permitting a more flexible use of space), this argument is also unpersuasive.

It is argued that Tilmanis describes as an object of the invention to sense the temperature of the evaporator coil and the temperature of the storage space of the refrigerator; that Tilmanis, therefore, teaches away from the movement of the second thermistor.

As explicitly stated in the previous office action, injection temperatures are well known in the art; examples are listed in the “evidence relied upon.”

It is argued on page 10 that claims 18 and 19 are not unpatentable over Tilmanis in view of Davis et al, due to dependency upon claim 17. As the argument provided concerning claim 17 is unpersuasive, so is this one.

It is argued on page 10 that claims 13, 15, 16, and 23-25 are not unpatentable over Tilmanis in view of Hansen.

It is argued that “nowhere does Hansen reference not locating a second temperature sensor in the inner chamber as an advantage.”

This allegation is somewhat confusing to the examiner, because in the next paragraph on page 10, the appellant states explicitly that “Hansen actually describes a sensor holder 9 that includes a frost sensor 16 and a second sensor 17 that measures evaporator temperature.” As pointed out by appellant, Hansen discloses the presence of two temperature sensors on a single holder.

It is further argued that “in the context of claims 13 and 15, since the sensors 16, 17 in Hansen are contained within the sensor holder 9, it is readily apparent that Hansen lacks the claimed sensor being arranged on an output of a channel terminating in the inner chamber.”

The sensor arrangement explicitly disclosed in Hansen, when implemented in Tilmanis, would result in one of the sensors of the combined system being located on an output of a channel terminating in the inner chamber. Even if this were not so, it still would have been obvious to arrange the sensors in such a way that one of them was on an output of a channel terminating in the inner chamber, in order to measure the injection temperature and use that in the control of the refrigerator.

Regarding claim 16, it is argued on page 11 that the sensor of Hansen is not held directly on the evaporator surface.

The examiner can only reiterate that it is clear from figures 5 and 6 of Hansen that temperature sensor 17 is directly on the vertical front face 25 of the evaporator; this is mentioned by the appellant on page 11 while discussing claim 24.

Regarding claim 24, the appellant repeats the argument that it is contrary to the teachings of Tilmanis to modify the structure as proposed in the office action; this argument is no more persuasive upon repetition. It is further argued that “Hansen in fact is silent with regard to a positioning of the *sensors except that the sensor holder 9 is secured to the vertical front face of the evaporator 25.* (emphasis added). Clearly, this does not constitute “silence” regarding sensor positions.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Alexis Cox/

6/17/2010

Conferees:

/Frantz F. Jules/

Supervisory Patent Examiner, Art Unit 3744

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/Greg Vidovich/

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